

Response under 37 CFR 1.116
Expedited Procedure
Examining Group 3600
Application No. 09/928,566
Paper Dated November 2, 2005
In Reply to USPTO Correspondence of August 24, 2005
Attorney Docket No. 1692-011111

Listing of Claims

1. (Currently Amended) In ~~an~~ dividing head using a multiple lead type worm, comprising with a circular table attached to a worm wheel shaft, said worm wheel shaft having at least one worm wheel assembled thereon, wherein the worm may be moved in an axial direction to adjust a backlash between the worm and the worm wheel, the improvement comprising:

~~a circular table attached to a worm wheel shaft, said worm wheel shaft having at least one worm wheel assembled thereon;~~

a hollow worm body having multiple lead type worm teeth formed such that the thickness dimension of each tooth gradually increases toward one end of said worm body along the direction of the rotation axis of said worm body;

a drive shaft fitted into a hollow portion of said worm body and supported by a thrust bearing on a frame, said worm body being able to rotate relative to said drive shaft and able to move in the axial direction of said drive shaft; and

an assembler having an annular portion which is coaxial with said drive shaft, wherein said annular portion may be displaced radially to press said worm body and said drive shaft to couple both by frictional engagement,

~~wherein rotation of said drive shaft rotates said worm body, thereby rotating said worm wheel and said circular table, thereby carrying out an angular positioning of the circular table.~~

whereby after said assembler is operated to uncouple said worm body and the shaft, to adjust said backlash, the worm body may be recoupled to said shaft without further relative movement between the worm body and the shaft.

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2. (Currently Amended) The ~~dividing head as claimed~~ improvement of claim 1, wherein said assembler includes a cylinder which forms said annular portion, the cylinder being disposed between said worm body and said drive shaft, having a fluid reservoir in an interior of the cylinder, and being expandable with the outer periphery and the inner periphery of said cylinder displaced outwardly and inwardly in the radial direction by the pressure of the reservoir fluid; a flange integrally following one end of said cylinder and having a screw hole connected to said reservoir; and a screw member screwable into said screw hole, and wherein said worm body has a fitting hole for receiving said cylinder, the fitting hole having a larger diameter than that of said drive shaft in an axial position corresponding to said worm teeth.

3. (Withdrawn) The dividing head as claimed in claim 1, wherein said worm body has an elastically deformable sleeve at one end, wherein said assembler has a first ring fitted on the outside of said sleeve, a second ring fitted on the outer periphery of said first ring on the worm teeth side, a third ring fitted on the outer periphery of said first ring on the opposite side to the worm teeth, and a plurality of screw members screwed into said second ring, penetrating said third ring, and wherein said first, second and third rings displace said sleeve in its axial direction according to the amount of screwing of said screw member into said second ring.

4. (Withdrawn) The dividing head as claimed in claim 3, wherein said first ring has an outer periphery having a section shaped like a mountain by two truncated conical faces, wherein said second ring has an inner periphery with a truncated conical shape

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corresponding to one of said truncated conical faces, the inner periphery of the second ring being fitted to one of said truncated conical faces, and wherein said third ring has an inner periphery with a truncated conical shape corresponding to the other of said truncated conical faces of said first ring, the inner periphery of the third ring being fitted to the other of said truncated conical faces.

5. (Currently Amended) The dividing head as claimed in improvement of
claim 1, wherein said dividing head is a multishaft dividing head comprising plural sets of worm bodies and said assemblers, and wherein at least two sets of said worm bodies are assembled into said drive shaft in common.